

CLAIM AMENDMENTS

1. (Currently Amended) A magnetoresistance sensor comprising:  
a sensor substrate;  
a control circuit for the magnetoresistance sensor, disposed on the sensor substrate;  
a resin film on the control circuit, the resin film including a plurality of cured polymer layers of different curable polymers, including a layer of a cured polymer film comprising a silicone polymer having a weight-average molecular weight of not less than 100,000 and a layer of a cured polymer film comprising a silicone polymer having a weight-average molecular weight of not more than 100,000; and  
a sensing portion having a microfine wiring pattern and disposed on ~~the~~ the resin film.

Claims 2-12 (Cancelled).

<sup>2</sup> ~~13~~. (Previously Presented) A method of fabricating a sensor element, comprising:  
applying a solution including a thermosetting polymer to a sensor substrate to form a curable polymer film;  
heating the curable polymer film to a temperature not lower than a fusing temperature and lower than a curing temperature of the thermosetting polymer so that the curable polymer film flows on the sensor substrate;  
heating the curable polymer film to a temperature not lower than the curing temperature to cure the curable polymer and form a resin film; and  
forming a sensor element on the resin film.

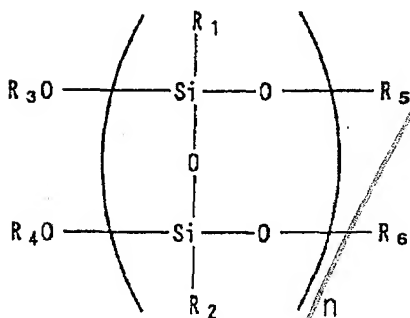
<sup>3</sup> ~~14~~. (Previously Presented) The method of fabricating a sensor element according to claim ~~13~~, wherein the thermosetting polymer is selected from the group consisting of a silicone polymer, a polyimide polymer, a polyimide silicone polymer, a polyarylene ether polymer, a bisbenzocyclobutene polymer, a polyquinoline polymer, a perfluorohydrocarbon polymer, a fluorocarbon polymer, and an aromatic hydrocarbon polymer.

4/15. (Previously Presented) An air flow sensor comprising:  
a silicon substrate;  
a supporting film on the silicon substrate;  
a resin film on the supporting film; and  
a sensing portion, including a microfine wiring pattern, on the resin film.

5 16. (Previously Presented) The air flow sensor according to claim 15, wherein the resin film is a cured polymer film of a curable polymer selected from the group consisting of silicone polymers, polyimide polymers, polyimide silicone polymers, polyarylene ether polymers, bisbenzocyclobutene polymers, polyquinoline, perfluorohydrocarbon, fluorocarbon polymers, and aromatic hydrocarbon polymers.

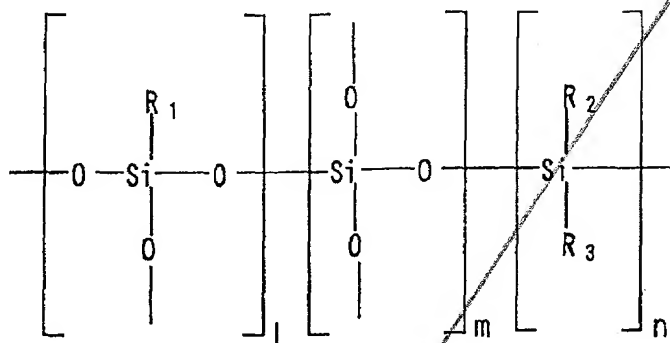
6 17. (Previously Presented) The air flow sensor according to claim 5, wherein the curable polymer is a photo-curing polymer.

18. (Previously Presented) The air flow sensor according to claim 17, wherein the resin film is a cured film of a silicone polymer represented by the general formula



wherein R<sub>1</sub>, R<sub>2</sub>, and R<sub>3</sub> may be the same or different, are selected from the group consisting of an aryl group, a hydrogen atom, an aliphatic alkyl group, a hydroxyl group, a trialkylsilyl group, and a functional group having an unsaturated bond, 1, m, and n are integers and 1 + m + n ≥ 1, and the silicone polymer has a weight-average molecular weight of not less than 1,000.

19. (Previously Presented) The air flow sensor according to claim 15, wherein the film is a cured film of a silicone polymer represented by the general formula



wherein  $\text{R}_1$  and  $\text{R}_2$  may be the same or different, and are selected from the group consisting of an aryl group, a hydrogen atom, an aliphatic alkyl group, and a functional group having an unsaturated bond,  $\text{R}_3$ ,  $\text{R}_4$ ,  $\text{R}_5$ , and  $\text{R}_6$  may be the same or different, and are selected from the group consisting of a hydrogen atom, an aryl group, an aliphatic alkyl group, a trialkylsilyl group, and a functional group having an unsaturated bond, and  $n$  is an integer and at least 1, and the silicone polymer has a weight-average molecular weight of not less than 1,000.

7 20. (Previously Presented) The air flow sensor according to claim 5, wherein the resin film comprises plural layers and each of the layers comprises a cured polymer film of a differently curable polymer.

8 21. (Previously Presented) The air flow sensor according to claim 7, wherein each of the layers comprises a cured film of a curable polymer having a respective, different molecular weight.

9 22. (Previously Presented) The air flow sensor according to claim 8, wherein the layers include a layer of a cured polymer film comprising a silicone polymer having a weight-average molecular weight of not less than 100,000 and a layer of a cured polymer film comprising a silicone polymer having a weight-average molecular weight of not more than 100,000.

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Application No. 10/030,426

<sup>10</sup> 23. (Previously Presented) The air flow sensor according to claim <sup>7</sup> 20, wherein an uppermost layer of the layers comprises a cured polymer film of a photo-curing polymer.